INTRODUCTION
The U.S. insurance industry has historically been an important institutional investor in both residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS). This article focuses on insurers’ holdings of modeled non-agency CMBS and non-agency MBS over the past four years. It covers the period since the development by NAIC of the alternative modeling process for evaluating the risk of loss arising from RMBS and CMBS instead of relying on ratings by nationally recognized statistical rating organizations (NRSROs).1 The decision to end regulatory reliance on NRSRO ratings followed the mass downgrades of RMBS and CMBS at the height of the 2008 global financial crisis. These aggressive downgrading actions greatly impacted insurers’ portfolios and their risk-based capital (RBC) charges which are tied to NAIC designations mapped to credit ratings by NAIC-approved NRSROs known as credit rating providers (CRPs).

This article leverages the work by the NAIC Structured Securities Group on financial modeling of RMBS and CMBS to estimate the impact on insurers’ RBC, henceforth referred to in this article as eRBC2, from deriving NAIC designations based on the modeled intrinsic prices (IP)3 instead of CRP credit ratings. It is also important to note that this procedure follows the requirements set forth in the Statement of Statutory Accounting Principles (SSAP) No. 43R—Loan-backed and Structured Securities—Revised.

Each RMBS and CMBS security is modeled to determine its intrinsic price, which drives the breakpoint carrying prices.4 The estimated expected losses, discounted at the security yield, are used to calculate each security’s intrinsic price. The intrinsic price is then applied to translate expected loss ranges into carrying price ranges for each NAIC designation. Insurers use these breakpoint carrying prices by reference to their book/adjusted carrying value (BACV) for that security to determine the appropriate designation and apply the corresponding RBC factor. This SSAP No. 43R procedure has a significant impact on the amount of RBC that insurance companies must maintain, particularly for RMBS holdings.

Changes in Insurer Holdings
The non-agency MBS holdings discussed in this report pertains only to CMBS and RMBS that were financially modeled. For the most part, insurers’ year-end 2013 modeled CMBS and RMBS holdings remained similar to previous years. The most noteworthy change was the decline in eRBC for RMBS holdings based on modeled designations. In addition, this was the first year that average BACV price and IPs of insurers’ RMBS holdings increased in value. On the CMBS side, almost all of the holdings remain as zero loss bonds. These bonds have no expected loss under any of the modeling scenarios and were, therefore, modeled at an IP of 100%, thus automatically equivalent to an NAIC 1 designation regardless of the insurer’s carrying value.

Insurers’ holdings of CMBS and RMBS have gradually declined over the past four years, although this trend seems to be slowing down. Repayments of existing loan balances, realized losses and low new issuance have led to substantial declines in the current outstanding balance of the U.S. non-agency MBS market. However, CMBS new issuance has been rebounding.

At year-end 2013, according to the Securities Industry and Financial Markets Association (SIFMA), total outstanding5 CMBS decreased (6.2%) to $604.9 billion and RMBS decreased (28.3%) to $1,044.7 billion, compared to year-end 2010 CMBS of $644.8 billion and $1,456.5 billion in RMBS. In contrast to the market decrease in outstanding mortgage securities, over the past four years, the insurance industry’s CMBS holdings declined by a larger percentage (13.2%), while RMBS holdings declined less than the market (12.3%).

The modeled year-end 2013 holdings of CMBS were $157.402 billion in par value (or 25.6%) of total CMBS outstanding, and RMBS at $132.674 billion in par value (or 12.7%) of the total RMBS market (Figure 1 on the following page).

Residential Mortgage-Backed Securities
The insurance industry continues to have significantly lower eRBC requirements for RMBS as a result of the SSAP No. 43R-based model-driven designations. The positive differential between using CRP ratings-based designations6 and SSAP No. 43R-based designations is shown in Figure 2 on the following page. The differential eRBC rose to $16.909 billion at year-end 2013, mainly as a result of a large decrease in the current outstanding balance of the U.S. non-agency MBS market. However, CMBS new issuance has been rebounding.

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crease in SSAP No. 43R-based model-driven eRBC to $1.447 billion, from $2.605 billion at year-end 2012.

Year-end 2013 RMBS holdings consisted of 26.58% zero loss bonds, an improvement from the previous year’s 21.30% zero loss portion. These bonds have no expected loss under any of the modeling scenarios and were, therefore, modeled at an IP of 100%. Conversely, 73.42% of securities were non-zero loss with an average IP of 85.11%, which is also an improvement over year-end 2012 non-zero loss portion, which had an average IP of 81.85%.

The first period that both the average IP and BACV price experienced a year-over-year increase was at year-end 2013. The large decrease in eRBC based on SSAP No. 43R in 2013 can be partially attributed to IP increasing at a faster pace than the BACV price, as shown in Figure 3. Intrinsic price increased to 88.44% at year-end 2013 from 85.05% the previous year, while the BACV price did not increase as much to 80.69% from 79.49% over the same time period. As the gap between IP and BACV price widened, the estimated SSAP No. 43R designations improved, and the eRBC requirement declined to $1.447 billion, which represented 1.4% of total RMBS (or $107.050 billion BACV holdings). This trend is consistent with positive market dynamics and increases in the Case-Shiller Home Price Index.

Subsequent to the financial crisis, insurers recognized impairments and newly acquired securities were trading at discounted prices to par which led to lower BACV, particularly in the RMBS market. Other-than-temporary impairments (OTTI) have decreased over the past four years from $4.16 billion to $0.5 billion.

Figure 4 on the following page illustrates 84.7% of RMBS holdings experienced an upgrade based on SSAP No. 43R designations compared to CRP-equivalent designations. The upgraded portion has a higher average IP of 87.69% compared to insurers’ more conservative average BACV price of 78.78%. This led to a materially lower eRBC. Securities that had no change in designations represented 14.6%, where the IP and BACV price were about the same, and 0.7% were downgraded, where the IP was lower than the BACV price.

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Figure 5 depicts the RMBS breakdown by estimated designations (SSAP No. 43R-based in the left-hand column running vertically) vs. designation based on CRP ratings in the top column running across. The SSAP No. 43R-based NAIC 1 category makes up most (84.93%) of the holdings of total BACV vs. CRP-equivalent designation (13.76%).

The bulk of the eRBC differential stems from the SSAP No. 43R-based upgrades to NAIC 1 designation, resulting in an eRBC difference of $14.272 billion. This SSAP No. 43R-based NAIC 1 balance of $90.919 billion (or 84.9%) of the RMBS portfolio has an average BACV price of 79.24%, which, in comparison, is favorably below the IP of 89.45% and leads to a significantly lower eRBC requirement.

**COMMERCIAL MORTGAGE-BACKED SECURITIES**

The insurance industry’s CMBS holdings have a narrower eRBC differential between SSAP No. 43R-based designs and CRP-based designs than RMBS. Nevertheless, the industry continued to experience a positive eRBC differential over the past three years (Figure 6).

The greatest difference between CMBS and RMBS is the quality of holdings. At year-end 2013, 95.96% of insurers’ CMBS holdings had no expected loss under the modeling scenarios and were, therefore, at an IP of 100%, thus automatically equivalent to an NAIC 1 designation regardless of the insurer’s carrying value. This was an improvement from year-end 2012, where zero loss portion was a smaller percentage (93.81%) of the CMBS portfolio.

Both IP and BACV price have gradually increased over the past four years for CMBS along with the Commercial Property Price Index (CPPI). Year-end 2013 was the first time that insurers’ average BACV price was shown to be higher than the IP. Nevertheless, the overall estimated eRBC requirement was lower than it would have been under the CRP-equivalent designations. This is mainly due to 10.2% of CMBS being upgraded based on SSAP No. 43R designations,

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which is driven by the high percentage of zero loss bonds. In
addition, OTTI have decreased over the past four years from
$2.489 billion to $0.421 billion.

Figure 7 illustrates while the overall BACV price of 98.38% is
higher than the average IP of 97.73%, there were still im-
provements in the SSAP No. 43R-based designations; 10.2% of
holdings were upgraded in relation to CRP-equivalent
designations. The average upgraded IP was favorably higher
at 90.66% vs. the average BACV of 84.27%. Securities that
had no change represented 89.1%, where the IP and BACV
were about the same, and 0.7% were downgraded, as the IP
was lower than the BACV. This led to a total estimated eRBC
difference of $0.727 billion.

Figure 8 depicts the CMBS breakdown by estimated desig-
nations. The SSAP No. 43R-based NAIC 1 category makes up
most of the holdings at 97.5% of total BACV compared to
the CRP-equivalent 1 designation of 88.13%. The main driv-
er for the difference was that zero loss bonds accounted for
95.96% of NAIC 1 designations.

Observing the SSAP No. 43R-based designations, most of
the lower eRBC results from the NAIC 1 designation, where
the IP of 99.12% is slightly higher than the BACV price of
99.02%. This NAIC 1 category, which accounts for $150.974
billion (or 97.4%) of the CMBS portfolio, contributed to a
difference of $0.720 billion in eRBC out of the total differ-
ence of $0.727 billion.

* CONCLUSION

The implementation of SSAP No. 43R with financial model-
ing for insurers’ year-end reporting of non-agency MBS has
had a large impact on insurers’ RBC requirements, particu-
arly for RMBS. The overall profile of non-agency holdings
continues to improve and is consistent with positive market
dynamics. The insurance industry’s average BACV price of
RMBS holdings is conservative relative to the financially
modeled intrinsic price. Additionally, the portion of zero
loss bonds and prices increased at year-end 2013 from year-
end 2012. CMBS holdings are comprised almost entirely of
zero loss bonds. The SSAP No. 43R-based profile of insurers’
non-agency MBS has resulted in materially lower eRBC re-
quirements relative to CRP-ratings-equivalent designations.

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**About the Author**

Azar Abramov has nearly a decade of pro-
fessional experience in insurance regu-
lation and analysis of investments. Abramov’s career began with the New
York State Insurance Department as an
intern in the Capital Markets Bureau,
where he assisted in analyzing Insurers’
investment portfolios. He transitioned
to the NAIC in 2006, where he continued to analyze insurance
company portfolios, perform research on industry wide invest-
ments and monitor capital markets activity. Since the onset of
the 2008 global financial crisis, Abramov has been heavily in-
volved in the analysis of structured securities and their impact
on the insurance industry. He earned a bachelor’s degree in
finance and investments from Baruch College’s Ziklin School of
Business and is a charted financial analyst (CFA).

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**Figure 7: CMBS SSAP No. 43R-Based Designation
Upgrade and Downgrades**

<table>
<thead>
<tr>
<th>Designation</th>
<th>IP</th>
<th>BACV</th>
<th>BACV %</th>
<th>% of BACV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upgrade</td>
<td>90.66%</td>
<td>84.27%</td>
<td>15,812,262,069</td>
<td>10.2%</td>
</tr>
<tr>
<td>No Change</td>
<td>99.19%</td>
<td>100.52%</td>
<td>138,004,119,688</td>
<td>89.1%</td>
</tr>
<tr>
<td>Downgrade</td>
<td>46.98%</td>
<td>76.86%</td>
<td>1,031,803,500</td>
<td>0.7%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>97.73%</td>
<td>98.38%</td>
<td>154,848,185,257</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Figure 8: CMBS SSAP No. 43R Designation vs. CRP- Equivalent
Designation (% of $154.848 Billion BACV, YE 2013)**

<table>
<thead>
<tr>
<th>% of $ BACV Designation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRP Equivalent Designation</td>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAIC-1</td>
<td>88.11%</td>
<td>4.93%</td>
<td>2.29%</td>
<td>1.24%</td>
<td>0.75%</td>
<td>0.18%</td>
<td>97.50%</td>
</tr>
<tr>
<td>NAIC-2</td>
<td>0.00%</td>
<td>0.01%</td>
<td>0.11%</td>
<td>0.20%</td>
<td>0.02%</td>
<td>0.01%</td>
<td>0.35%</td>
</tr>
<tr>
<td>NAIC-3</td>
<td>0.00%</td>
<td>0.01%</td>
<td>0.09%</td>
<td>0.15%</td>
<td>0.09%</td>
<td>0.01%</td>
<td>0.46%</td>
</tr>
<tr>
<td>NAIC-4</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.09%</td>
<td>0.20%</td>
<td>0.16%</td>
<td>0.02%</td>
<td>0.07%</td>
</tr>
<tr>
<td>NAIC-5</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.04%</td>
<td>0.20%</td>
<td>0.26%</td>
<td>0.05%</td>
<td>0.54%</td>
</tr>
<tr>
<td>NAIC-6</td>
<td>0.02%</td>
<td>0.00%</td>
<td>0.01%</td>
<td>0.09%</td>
<td>0.23%</td>
<td>0.44%</td>
<td>0.79%</td>
</tr>
<tr>
<td>Total</td>
<td>88.13%</td>
<td>4.95%</td>
<td>2.63%</td>
<td>2.08%</td>
<td>1.50%</td>
<td>0.71%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

* Green denotes upgraded portion (from CRP-equivalent designation to SSAP No. 43R-based designation); orange
denotes no change; and blue denotes downgraded.
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